



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
SURATHKAL, MANGALORE - 575 025

Course Code – CS111

Course Name – Computer Programming Lab

Lab - 02

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Question - 1

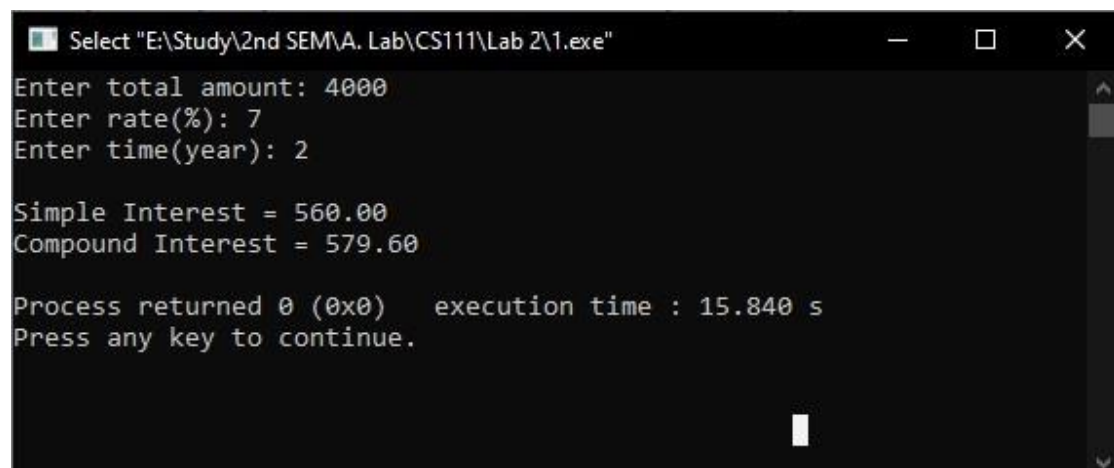
To find Simple and Compound Interest

Answer

```
#include<stdio.h>
#include<math.h>
int main()
{
    float total_amount, rate, time, s_i, c_i;
    printf("Enter total amount: ");
    scanf("%f",&total_amount);
    printf("Enter rate(%): ");
    scanf("%f",&rate);
    rate = rate/100;
    printf("Enter time(year): ");
    scanf("%f",&time);
    //calculating simple and compound interests
    s_i = total_amount*rate*time;
    c_i = (total_amount*(pow((1+rate),time)))-total_amount;

    printf("\nSimple Interest = %.2f\n",s_i);
    printf("Compound Interest = %.2f\n",c_i);
    return 0;
}
```

Output



The screenshot shows a Windows command prompt window titled "Select 'E:\Study\2nd SEM\A. Lab\CS111\Lab 2\1.exe'". The program prompts the user for three inputs: "Enter total amount: 4000", "Enter rate(%): 7", and "Enter time(year): 2". It then displays the results: "Simple Interest = 560.00" and "Compound Interest = 579.60". At the bottom, it shows "Process returned 0 (0x0) execution time : 15.840 s" and "Press any key to continue." with a cursor waiting for input.

Question – 2

To read the radius of a circle and find its Area and Perimeter.

Answer

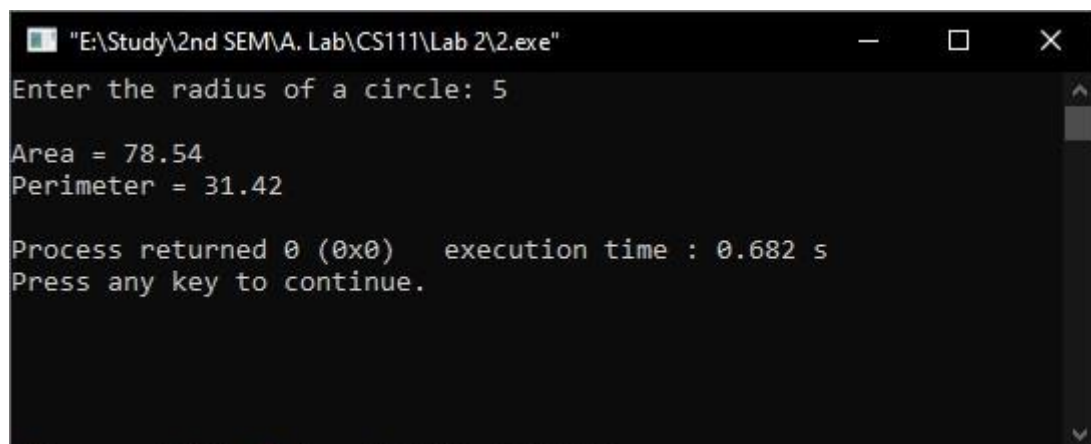
```
#include<stdio.h>
#define PI 3.1416
int main()
{
    int radius;
    float area, perimeter;
    printf("Enter the radius of a circle: ");
    scanf("%d", &radius);

    //calculating area and perimeter
    area = PI*radius*radius;
    perimeter = (2*PI*radius);

    printf("\nArea = %.2f\n", area);
    printf("Perimeter = %.2f\n", perimeter);

    return 0;
}
```

Output



```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\2.exe"
Enter the radius of a circle: 5

Area = 78.54
Perimeter = 31.42

Process returned 0 (0x0)   execution time : 0.682 s
Press any key to continue.
```

Question – 3

To read the temperature in Fahrenheit and convert it to degree centigrade.

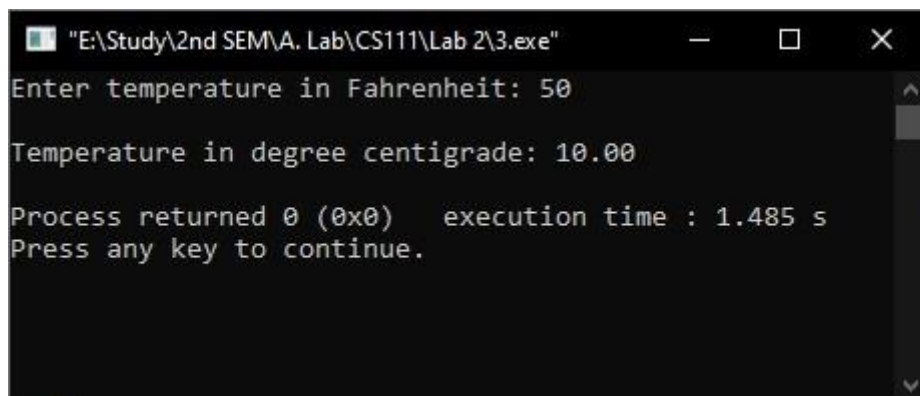
Answer

```
#include<stdio.h>
int main()
{
    float F, C;
    printf("Enter temperature in Fahrenheit: ");
    scanf("%f", &F);

    //convert temperature into degree centigrade
    C = (F-32)*5/9;

    printf("\nTemperature in degree centigrade: %.2f\n", C);
    return 0;
}
```

Output



```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\3.exe"
Enter temperature in Fahrenheit: 50
Temperature in degree centigrade: 10.00
Process returned 0 (0x0)   execution time : 1.485 s
Press any key to continue.
```

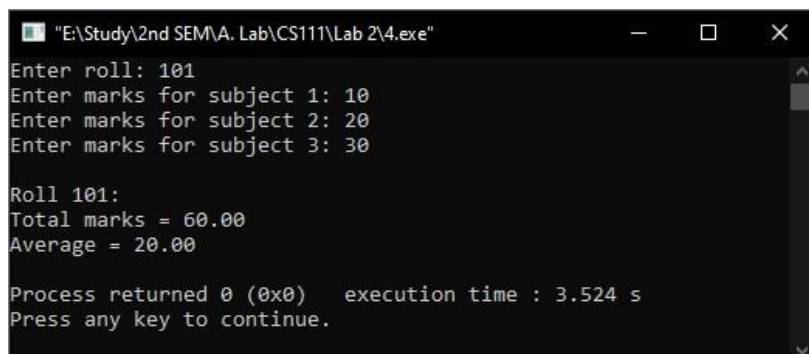
Question – 4

Program to accept student roll no, marks in 3 subjects and calculate total, average of marks and print them with appropriate messages.

Answer

```
#include<stdio.h>
int main()
{
    int roll;
    float mark[3], sum=0, avg;
    printf("Enter roll: ");
    scanf("%d",&roll);
    int i;
    //taking marks and calculate total
    for(i=0; i<3; i++)
    {
        printf("Enter marks for subject %d: ", i+1);
        scanf("%f", (mark+i));
        sum += mark[i];
    }
    avg = sum/3;
    printf("\nRoll %d:\n",roll);
    printf("Total marks = %.2f\n", sum);
    printf("Average = %.2f\n",avg);
    return 0;
}
```

Output



```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\4.exe"
Enter roll: 101
Enter marks for subject 1: 10
Enter marks for subject 2: 20
Enter marks for subject 3: 30

Roll 101:
Total marks = 60.00
Average = 20.00

Process returned 0 (0x0)   execution time : 3.524 s
Press any key to continue.
```

Question – 5

An Employee's Basic Pay (BP) is to be read through keyboard. DA is 40% of BP, HRA is 20% of BP, calculate the Gross Pay (GP) GP is computed as BP+DA+HRA.

Answer

```
#include<stdio.h>
int main()
{
    float BP, DA, HRA, GP;
    printf("Enter Basic Pay: ");
    scanf("%f",&BP);

    //Calculation
    DA = BP*40/100;
    HRA = BP*20/100;
    GP = BP+DA+HRA;

    printf("\nGross Pay: %.2f\n",GP);
    return 0;
}
```

Output

```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\5.exe"
Enter Basic Pay: 1000

Gross Pay: 1600.00

Process returned 0 (0x0)   execution time : 1.817 s
Press any key to continue.
```

Question – 6

Program to find distance between two points (x1, y1) and (x2, y2) in a Cartesian plane.

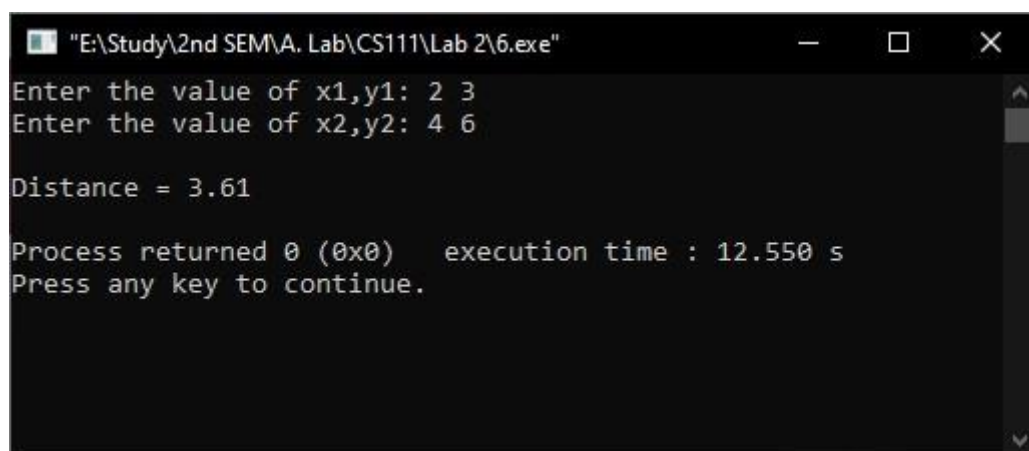
Answer

```
#include<stdio.h>
#include<math.h>
int main()
{
    int x1, y1, x2, y2;
    printf("Enter the value of x1,y1: ");
    scanf("%d %d",&x1,&y1);
    printf("Enter the value of x2,y2: ");
    scanf("%d %d",&x2,&y2);

    // calculate distance
    float dis;
    dis = sqrt(pow((x2-x1),2)+pow((y2-y1),2));

    printf("\nDistance = %.2f\n",dis);
    return 0;
}
```

Output



```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\6.exe"
Enter the value of x1,y1: 2 3
Enter the value of x2,y2: 4 6

Distance = 3.61

Process returned 0 (0x0)   execution time : 12.550 s
Press any key to continue.
```

Question – 7

Program to swap two numbers using temporary variable. Also print the original and exchanged values

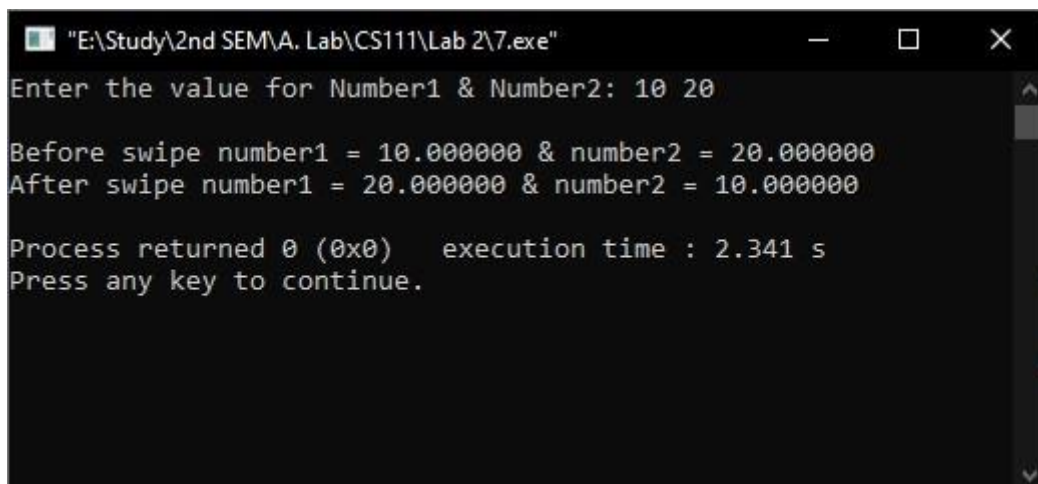
Answer

```
#include<stdio.h>
int main()
{
    float n1, n2;
    printf("Enter the value for Number1 & Number2: ");
    scanf("%f %f",&n1,&n2);
    printf("\nBefore swipe number1 = %f & number2 = %f\n",n1, n2);

    //swipe
    float temp = n1;
    n1 = n2;
    n2 = temp;

    printf("After swipe number1 = %f & number2 = %f\n",n1, n2);
    return 0;
}
```

Output



```
"E:\Study\2nd SEM\A. Lab\CS111\Lab 2\7.exe"
Enter the value for Number1 & Number2: 10 20

Before swipe number1 = 10.000000 & number2 = 20.000000
After swipe number1 = 20.000000 & number2 = 10.000000

Process returned 0 (0x0)   execution time : 2.341 s
Press any key to continue.
```